

NON-PUBLIC?: N
ACCESSION #: 9301070161
LICENSEE EVENT REPORT (LER)

FACILITY NAME: HOPE CREEK GENERATING STATION PAGE: 1 OF 5

DOCKET NUMBER: 05000354

TITLE: Reactor Shutdown to comply with recommended actions
contained in NRC Bulletin 88-07, Supplement 1.
EVENT DATE: 12/03/92 LER #: 92-013-00 REPORT DATE: 12/31/92

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR
SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: Louis Aversa, Senior Staff TELEPHONE: (609) 339-3386
Engineer - Technical

COMPONENT FAILURE DESCRIPTION:
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT:

On 12/3/92, at approximately 0936 hrs, Control Room Operators (NCO -RO licensed) received indications of a loss of the reactor recirculation motor generator set (MG set) cooling fans. Loss of both cooling fans resulted in a trip of both reactor recirc MG sets and reactor recirculation pumps. Station Operating procedures require operators to place the Mode switch to the Shutdown position when in Operational Condition 1 with no reactor recirculation pumps in operation. Control room operators placed the Mode Switch to Shutdown position at 0937 hrs, verifying all control rods were fully inserted and all plant safety systems functioned as required. Initial investigation determined that a 480VAC motor control center (MCC) power supply had tripped resulting in the loss of the MG set cooling fans. Additional non safety related equipment such as turbine generator lift pumps, chillers and motor operated valves associated with the steam jets and feedwater heating

system had lost power. The MCC feeder breaker was checked for abnormal conditions and none were noted. The MCC was re-energized and all non safety related components were restored to operation. The "A" Reactor Recirculation pump was restarted at 1305, and was secured again at 1651 when shutdown cooling was initiated. Subsequent investigation revealed the control handle for the MCC feeder breaker was inadvertently bumped by decon techs working in the area of a 480VAC substation. Access to the breaker control area has been restricted and decon techs have been given additional training on the sensitivity of equipment in the work location.

END OF ABSTRACT

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PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor (BWR/4)
Reactor Recirculation System

IDENTIFICATION OF OCCURRENCE

TITLE: Reactor Shutdown to comply with recommended actions contained in NRC Bulletin 88-07, Supplement 1.

Event Date: 12/03/92

Event Time: 1230

This LER was initiated by Incident Report No. 92-190

CONDITIONS PRIOR TO OCCURRENCE

Plant in OPERATIONAL CONDITION 1 (Power Operation)
Reactor Power 100% of rated, 1120 MWe.

DESCRIPTION OF OCCURRENCE

On 12/3/92, at approximately 0936 hrs, Control Room Operators (NCO -RO licensed) received indications of a loss of the reactor recirculation motor generator set (MG set) cooling fans. Loss of both cooling fans resulted in a trip of both reactor recirc MG sets and reactor recirculation pumps. Station Operating procedures require operators to place the Mode switch to the Shutdown position when in Operational Condition 1 with no reactor recirculation pumps in operation. Control room operators placed the Mode Switch to Shutdown position at 0937 hrs, verifying all control rods were fully inserted and all plant safety systems functioned as required. Initial investigation determined that a 480VAC motor control center (MCC) power supply had tripped resulting in

the loss of the MG set cooling fans. Additional non safety related equipment such as turbine generator lift pumps, chillers and motor operated valves associated with the steam jets and feedwater heating system had lost power. The MCC feeder breaker was checked for abnormal conditions and none were noted. The MCC was re-energized and all non safety related components were restored to operation. The "A" Reactor Recirculation pump was restarted at 1305, and was secured again at 1651 when shutdown cooling was initiated.

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ANALYSIS OF OCCURRENCE

The Reactor Recirculation System is required to be in operation during operational condition 1 & 2. Plant Technical Specifications requires insertion of control rods to reduce power to below the 80% rod line within 2 hours when no recirculation pumps are in service and shutdown within the following 12 hours if a recirc pump is not restored. As a result of recommendations contained in NRC BULLETIN NO. 88-07, Supplement 1 Power oscillations in Boiling Water Reactors, Plant procedures were revised to place the mode switch to shutdown in the event no reactor recirculation pumps are operating in operational condition 1.

The design of the Hope Creek reactor recirculation motor generator sets provided an automatic trip of the MG sets in the event of a loss of the cooling fans. As the plant Technical Specifications allowed operation with no recirculation pumps for a short duration and no Reactor Protection system actuation signals are generated on this type of event, the plant design to trip the recirculation pumps on a loss of the cooling fans was not considered a significant event.

The cooling fans for the MG sets tripped as a result of the control power being lost for the cooling fan dampers. Twenty seconds after the dampers failed closed, a low flow condition tripped both MG Set cooling fans. With both MG Set cooling fan breakers open for 30 seconds a MG set trip is initiated. The power for the dampers was lost when a decon technician (contract personnel) working in the area of a non vital 480VAC substation inadvertently bumped a breaker control handle which opened the breaker for the MCC that powers the fan dampers. The technician was moving a large container of dry ice which was being used to support decon of small tools. While moving the container between the substation and a support column, the container bumped the control handle for the breaker causing the breaker to open. No alarms were received in the control room as the annunciator will only alarm when the breaker opens on a trip condition and not when the breaker is opened with the control switch.

As a result of both reactor recirculation pumps tripping, Control Room personnel placed the Reactor Mode Switch to the Shutdown position in accordance with an Abnormal Operating procedure which addresses actions to be taken for reactor core instability concerns. The procedure was created to provide direction to be taken by operations personnel for various events where reactor core power oscillations may occur.

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APPARENT CAUSE OF OCCURRENCE

The root cause of the recirculation pump trip was personnel error. The technician inadvertently bumped the control handle and the fact that the decon equipment was set up in an area where the only available pathway for equipment to be moved was within two to three inches of breaker operating devices contributed to the recirc pump trip. The cause of the reactor shutdown was due to instability concerns and recommended actions contained in NRC Bulletin 88-07, Supplement 1.

PREVIOUS OCCURRENCES

There have been no previous occurrences of a Reactor shutdown due to a dual reactor recirculation pump trip reported at Hope Creek.

SAFETY SIGNIFICANCE

This incident posed minimal safety significance as the reactor shutdown was performed solely to comply with the recommended actions contained in NRC Bulletin 88-07, Supplement 1, and no other scram conditions or shutdown requirements existed. All plant systems responded per design for both the recirculation pump trip and the subsequent reactor shutdown.

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CORRECTIVE ACTIONS

1. A post reactor scram review and Significant Event Response Team (SERT) review were performed to ensure all systems and functions operated properly and provide an independent assessment of the event.
2. The pathway which was being used to move the dry ice container in front of the 480VAC substation has been restricted. An alternate path has been established to allow access to the decon equipment area without passing in the vicinity of substation controls.

3. Contractor Personnel involved in the event have been given additional training on the equipment located in the work area.

4. The need to revise the design of the actuator power supply for the MG set cooling fan dampers and the automatic trip of the recirc MG sets on loss of cooling is under evaluation.

Sincerely,

J. J. Hagan
General Manager -
Hope Creek Operations

LLA/

SORC Mtg. 93-001

ATTACHMENT 1 TO 9301070161 PAGE 1 OF 1

PSE&G

Public Service Electric and Gas Company P.O. Box 236
Hancocks Bridge, New Jersey 08038

Hope Creek Generating Station

DATE December 31, 1992

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Dear Sir:

HOPE CREEK GENERATING STATION
DOCKET NO. 50-354
UNIT NO. 1
LICENSEE EVENT REPORT 92-013-00

This Licensee Event Report is being submitted pursuant to the requirements of 10CFR 50.73 (a) (2) (iv).

Sincerely,

J. J. Hagan
General Manager -

Hope Creek Operations

LLA/

Attachment
SORC Mtg. 93-001
C Distribution

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